

CLAIMS

1. A lithographic projection apparatus comprising:
a radiation system to provide a projection beam of radiation;
5 a first object table adapted to support patterning structure which can be used to pattern the projection beam according to a desired pattern;
a second object table to hold a substrate;
a vacuum chamber provided with a first vacuum generator constructed and arranged to provide a vacuum beam path for the projection beam;
10 a projection system to project the patterned beam onto a target portion of the substrate;
at least one conduit communicating a utility to a component of said lithographic projection apparatus moveable in at least one degree of freedom in said vacuum chamber;
15 a conduit shield substantially separating said vacuum chamber from a space comprising the at least one conduit, said conduit shield being constructed and arranged to allow for movement of the component in said at least one degree of freedom, and
a second vacuum generator constructed and arranged to provide a vacuum in the space comprising the conduits.
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2. A lithographic projection apparatus according to claim 1, wherein said conduit shield comprises a conduit conduct to guide and shield said at least one conduit.
3. A lithographic projection apparatus according to claim 2, wherein said conduit
25 conduct has at least two joints.
4. A lithographic projection apparatus according to claim 2, wherein said conduit conduct comprises at least one hollow elongate arm portion.
- 30 5. A lithographic projection apparatus according to claim 4, wherein said at least one hollow elongate arm portion is translatable along its elongate direction relative to another structure at a translation joint.

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6. A lithographic projection apparatus according to claim 1, wherein said vacuum provided with said second vacuum generator to the space comprising the at least one conduit has a higher pressure than the pressure of the vacuum provided with said first gas evacuating means to the vacuum chamber.

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7. A lithographic projection apparatus according to claim 3, wherein moving co-operating surfaces of said joint are furnished with vacuum seals.

8. A lithographic projection apparatus according to claim 1, wherein said component
10 is an object table and said conduits are constructed and arranged to communicate utilities to said object table.

9. A device manufacturing method using a lithographic apparatus comprising:
projecting a patterned projection beam of radiation through a vacuum chamber
15 onto a target portion of a substrate that is at least partially covered by a layer of radiation-sensitive material;

providing a utility through a conduit to a moveable component of the lithographic projection apparatus, which component is disposed in said vacuum chamber;

20 shielding a vacuum in said vacuum chamber from said conduits with a conduit shield;

moving said conduit shield in accordance with movement of the moveable component; and

25 providing a second vacuum in a space comprising the conduits and separated by the conduit shield from said vacuum chamber.

10. A device manufactured in accordance with the method of claim 9.

11. A lithographic projection apparatus, comprising:
30 a radiation system that provides a beam of radiation;
a first object table adapted to support patterning structure which can be used to pattern the projection beam according to a desired pattern;
a second object table for holding a substrate;

a first vacuum region carrying a vacuum through which said projection beam travels;

a projection system that projects the patterned beam onto a target portion of the substrate;

5 a conduit communicating a utility to a component of said lithographic projection apparatus moveable within said first vacuum region;

a second vacuum region within which said conduit is disposed; and

a conduit shield separating said first vacuum region from said second vacuum region, said conduit shield permitting movement of said component within said first

10 vacuum region.

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